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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,616	10/06/2003	Bernardo Donoso	AMAT/8260/CMP/ECP/RKK	5563
44257	7590	02/17/2006	EXAMINER	
PATTERSON & SHERIDAN, LLP 3040 POST OAK BOULEVARD, SUITE 1500 HOUSTON, TX 77056			HUSBAND, SARAH E	
			ART UNIT	PAPER NUMBER
			1746	
DATE MAILED: 02/17/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

10/680,616

Applicant(s)

DONOSO ET AL.

Examiner

Sarah E. Husband

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 33-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Claims 33-43 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 12/5/2005. The Applicant's arguments that the different inventions are classified in the same class and would not require additional search by the Examiner. This is not found to be persuasive because the separate inventions would require separate searches as is shown by their different classifications. Therefore, the restriction is made final. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Response to Arguments***

Applicant's arguments, see Remarks, filed 12/5/2005, with respect to the objections of the specification, drawings and claims have been fully considered and are persuasive. In light of the amendments/corrections, the objections of the specification, drawings and claims have been withdrawn.

Applicant's arguments filed 12/5/2005 have been fully considered but they are not persuasive. Applicant argues that the reference does not teach an interior processing volume or a hub having an upper surface. However, this is not persuasive because the reference does teach these features as the interior processing volume is surrounded by the exterior process bowl (30), which can be seen in Figure 4, and Item 17 is part of this interior

processing volume. Further, the central hub member (8) terminates in a stationary upper surface (4) where the backside gas and fluid dispensing are positioned (See Fig. 4). Also Applicant states that Lindner's waveguide senses the presence of a substrate, but then argues that Lindner's waveguide does not sense the presence and planarity of the substrate. This reference does teach the limitation of sensing the substrate provided in claim 13, as Applicant concurs, and therefore this argument is not commensurate with the scope of the claimed invention.

Applicant's arguments with respect to claims 8, 16, 17, 21, 23, 24 and dependent claims have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless – (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Lindner (US Patent Application Publication 20020002991 A1).

Lindner discloses a substrate treating apparatus having an inner process region (Fig. 4, Item 17), a rotatable substrate support member having a rotatable flywheel (Fig. 2, Item 17), a stationary tubular body (fixed central hub member) (Fig. 2, Item 8) having a plurality of gripping elements (engaging members) (Fig. 2, Item 19), and the central member having a plurality of fluid supplying lines (nozzles) with one as a gas dispensing nozzle (Fig. 2, Items 22, 24 and 26) and at least one frontside fluid dispensing nozzle (Fig. 4, Item 28; paragraphs

34-40; paragraph 47). Lindner further discloses there can be a waveguide (substrate sensing assembly) to indicate whether a wafer is in place (paragraph 15) which is positioned outside the cell body because it extends into the bottom portion (Fig. 4, Item 36).

Claims 16, 17, 21, 23 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Taatjes (US Patent No. 6,167,893).

Taatjes discloses a substrate treatment apparatus having a rotatable chuck (flywheel) having a plurality of clamping arms (substrate engaging finger assemblies) each having an outer pivotally mounted substrate engaging member (Fig. 1, Item 112) and an inner fixed member (Fig. 1, Item 16; col. 2, ll. 26-60)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4, 5, 7, 16, 17, 21, 23, 24 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner in view of Taatjes (US Patent No. 6,167,893).

Lindner discloses the substrate treating apparatus shown above in the 102(b) rejection. Lindner does not disclose engaging fingers being pivotally mounted. Taatjes discloses having a plurality of clamping arms (substrate engaging finger assemblies) each having an outer pivotally mounted substrate engaging member (Fig. 1, Item 112) and an inner fixed member (Fig. 1, Item 116; col. 2, ll. 26-60). Taatjes also discloses that the

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engaging fingers are pivotally mounted and each also has a fixed support pin (support post member) (Fig. 1, Items 112 and 110). Taatjes also discloses a horizontally positioned wafer holding notch having an angled surface to guide the substrate (Fig. 1, Item 117A) and the engaging member is positioned between an open position and closed position shown in Figure 1 with the arrows (Item 120; col. 2, ll. 26-67). Taatjes further discloses the outer engaging member is pivotally actuatable (Fig. 1, Item 114 and 120; col. 2, ll. 40-50). Taatjes discloses a post having a substantially horizontal surface and an angled centering surface (Fig. 1; col. 2, ll. 49-57) and the fixed engaging member is inside of the pivoting member (Fig. 1 and 2A, Items 116 and 112). Lindner and Taatjes are analogous art because they are from the same field of endeavor, wafer treatment apparatus. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Lindner with Taatjes for the benefit of holding the wafer securely (col. 1).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner.

Lindner discloses the substrate treating apparatus shown above in the 102(b) rejection. Lindner further describes a shield (30, 40). Although the shield (30) shown by Lindner is not attached to hub yet substantially covers the flywheel, it would be obvious to one of ordinary skill in the art to attach this member to the hub as shield (40) is also attached and the Courts have upheld that making elements integral is obvious, *Nerwin v. Erlichman* 168 USPQ 177 (PO BdPatApp 1969); *In re Wolfe* 116 USPQ 443 (CCPA 1958).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner and Taatjes as applied to claims 1 and 2 above, and further in view of Kuroda (US Patent No. 6,811,618).

Lindner and Taatjes disclose the substrate treatment apparatus shown above in the 103(a) rejection. They do not disclose specifically an engaging finger member having a rounded leading edge with a first thickness and a tapering trailing edge having a second thickness less than the first thickness. Kuroda discloses the shape of the engaging fingers being curved and also tapering in thickness (Fig. 8, Item 110 and 112; col. 10, ll. 46-51). Lindner, Taatjes and Kuroda are analogous art because they are from the same field of endeavor, wafer treatment apparatus. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Lindner and Taatjes with Kuroda for the benefit of reducing air resistance when rotating the wafer (col. 10, ll. 48-50).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner and Taatjes as applied to claims 1 and 2 above, and further in view of Maekawa (US Patent No. 5,775,000).

Lindner and Taatjes disclose the apparatus shown above in the first 103(a) rejection. They do not disclose the engaging fingers pivotally actuated by the vertical movement of a shield. Maekawa discloses the engaging fingers pivotally actuated by the vertical movement of a cup (shield) (Fig. 3, 5; col. 4). Lindner, Taatjes and Maekawa are analogous art because they are from the same field of endeavor, wafer treatment apparatus. At the time of the

invention, it would have been obvious to modify Lindner and Taatjes with Maekawa for the benefit of better controlling the wafer placement and supporting mechanism.

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner in view of Allen (US Patent No. 4,518,678).

Lindner discloses the substrate treating apparatus shown above in the 102(b) rejection. Lindner does not disclose a circulation breaker member attached to the central hub member. Allen discloses a raised baffle (circulation breaker) to prevent chemical backstreaming (Fig. 4, Item 35; col. 3, ll. 13-16). Although Allen does not show a plurality of the baffles, the Courts have ruled that the duplication of parts is obvious, *St. Regis Paper Co. v. Beemis Co., Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960). The baffle is placed on the support member, is shaped with a tapered leading edge and minimizes the formation of low pressure toward the center, preventing chemical backstreaming.

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner in view of Orii (US Patent No. 6,863,741).

Lindner discloses the apparatus as shown above in the 102(b) rejection. Lindner does not disclose a light emitter and light detector or its position. Orii discloses a wafer inspecting section having an optical sensor containing a light emitting and light receiving (detecting) element in the wafer path (parallel to the wafer position), which can sense whether a wafer is present or whether it is held normally. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the wafer treatment apparatus shown by Lindner with an optical sensor having light emitters and detectors



shown by Orii for the benefit of not only detecting the wafer's presence but also sensing if the wafer was held normally (col. 5, ll. 10-20; Fig. 3, Items 31 and 32).

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner and Taatjes as applied to claim 16 and further in view of Kuroda.

Lindner and Taatjes disclose the wafer treating apparatus shown above in the 103(a) rejection. Taatjes also discloses an engaging notch at the upper and inside end of the engaging assembly (Fig. 1, Item 117). Taatjes does not disclose specifically an engaging finger member having a rounded leading edge with a diameter and a tapering trailing edge having a second diameter less than the first thickness. Kuroda discloses the shape of the engaging fingers being curved and also tapering in thickness (Fig. 8, Item 110 and 112; col. 10, ll. 46-51). Lindner, Taatjes and Kuroda are analogous art because they are from the same field of endeavor, wafer treatment apparatus. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Lindner and Taatjes with Kuroda for the benefit of reducing air resistance when rotating the wafer (col. 10, ll. 48-50).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner and Taatjes as applied to claims 16 and 21 above and further in view of Maekawa.

Lindner and Taatjes disclose the apparatus shown above in the first 103(a) rejection. They do not disclose the engaging fingers pivotally actuated by the vertical movement of a shield. Maekawa discloses the engaging fingers pivotally actuated by the vertical movement of a cup (basin shield) (Fig. 3, 5; col. 4). Lindner, Taatjes and Maekawa are analogous art because they are from the same field of endeavor, wafer treatment apparatus. At the time of

the invention, it would have been obvious to modify Lindner and Taatjes with Maekawa for the benefit of better controlling the wafer placement and supporting mechanism.

Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner and Taatjes as applied to claim 16 above, and further in view of Allen.

Lindner and Taatjes disclose the wafer treatment apparatus shown above in the previous 103(a) rejection. They do not disclose circulation breakers. Allen discloses a raised baffle (circulation breaker) to prevent chemical backstreaming (Fig. 4, Item 35; col. 3, ll. 13-16). Although Allen does not show a plurality of the baffles, the Courts have ruled that the duplication of parts is obvious, *St. Regis Paper Co. v. Beemis Co., Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960). The baffle is placed on the support member and extends outward and upward toward the substrate as can be seen in Figure 4. Although Allen doesn't specifically disclose the baffle floating above the rotating flywheel, when combining Allen's baffles with Lindner's fixed and stationary portions of a rotation mechanism, one of ordinary skill in the art would realize that in order to reduce the backflow of liquid, the baffles must be attached to the stationary portion in order to accomplish this task. Taatjes further discloses the chuck can be made of a plastic material and therefore, it would be within the level of one of ordinary skill in the art to modify the plastic chuck shown by Taatjes with plastic baffles for the benefit of preventing chemical backstreaming and having an apparatus made of one continuous material. Therefore, it would have been obvious to one of ordinary skill in the art to modify the structure shown by Lindner and Taatjes with the baffles for the benefit of more effectively cleaning a wafer.

Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindner and Taatjes in view of Orii (US Patent No. 6,863,741).

Lindner and Taatjes disclose the apparatus as shown above in the 103(a) rejection. Lindner and Taatjes do not disclose a light emitter and light detector or its position. Orii discloses a wafer inspecting section having an optical sensor containing a light emitting and light receiving (detecting) element in the wafer path (parallel to the wafer position), which can sense whether a wafer is present or whether it is held normally. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the wafer treatment apparatus shown by Lindner and Taatjes with an optical sensor having light emitters and detectors shown by Orii for the benefit of not only detecting the wafer's presence but also sensing if the wafer was held normally (col. 5, ll. 10-20; Fig. 3, Item 31).

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action.

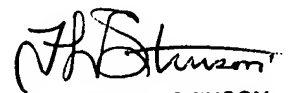
In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah E. Husband whose telephone number is (571) 272-8387. The examiner can normally be reached on M-F 7:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael E. Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SEH

  
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